US009428451B2

(12) **United States Patent**
Hu

(10) **Patent No.: US 9,428,451 B2**
(45) **Date of Patent: *Aug. 30, 2016**

(54) **CYCLIC PROCESS FOR THE PRODUCTION OF TAURINE FROM ALKALI ISETHIONATE**

(71) Applicant: **Songzhou Hu**, Princeton, NJ (US)

(72) Inventor: **Songzhou Hu**, Princeton, NJ (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 177 days.

This patent is subject to a terminal disclaimer.

(21) Appl. No.: **14/120,651**

(22) Filed: **Jun. 12, 2014**

(65) **Prior Publication Data**

US 2015/0299114 A1 Oct. 22, 2015

Related U.S. Application Data

(63) Continuation-in-part of application No. 14/120,046, filed on Apr. 18, 2014.

(51) **Int. Cl.**

C07C 303/32	(2006.01)
C07C 303/02	(2006.01)
C07C 303/44	(2006.01)

(52) **U.S. Cl.**

CPC ***C07C 303/32*** (2013.01); ***C07C 303/02*** (2013.01); ***C07C 303/44*** (2013.01)

(58) **Field of Classification Search**

None

See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

1,932,907	A	10/1933	Nicodemus	
1,999,614	A	4/1935	Nicodemus	
2,820,818	A	1/1958	Sexton	
2014/0121405	A1*	5/2014	Chen	C07C 303/18 562/104

FOREIGN PATENT DOCUMENTS

CN	101486669	7/2009
CN	101508657	8/2009
CN	101508658	8/2009
CN	101508659	8/2009
DE	219 023	2/1985
WO	WO 01/77071	10/2001

* cited by examiner

Primary Examiner — Karl J Puttlitz

(57) **ABSTRACT**

A cyclic process is disclosed for the production of taurine from alkali isethionate in a high overall yield by continuously converting the byproducts of the ammonolysis reaction, sodium ditaurinate and sodium tritaurinate, to sodium taurinate. Sodium sulfate and residual taurine in the crystallization mother liquor are efficiently separated by converting taurine into a highly soluble form of sodium taurinate or ammonium taurinate while selectively crystallizing sodium sulfate.

8 Claims, 2 Drawing Sheets